



**i-Warm™**  
**Fluid Warmer**

# **User's Manual**

**Midmark Corporation**  
60 Vista Drive, Box 286  
Versailles, OH 45380-0286  
Customer Service and Technical Service  
TEL: 1-800-MIDMARK (1-800-643-6275)  
[www.midmark.com](http://www.midmark.com)

## **i-Warm Fluid Warmer Features**

- Portable and light weight
- Warms up all I.V. fluids except transfusion fluids
- Convenient hanging belt to hang on a stand
- I.V. temperature displayed in Fahrenheit or Celsius
- Temperature overheating protection

## **Table of Contents**

General information.....	2
Precautions.....	2
Equipment Alert .....	3
Product Description.....	3
Instructions for Use.....	4
Effect of Flow Rate on Fluid Temperature.....	5
Specifications.....	6
Storage.....	6
Warranty.....	7

## **General Information**

The i-Warm Fluid Warmer is a dry-heat device designed for warming I.V. fluids safely through the heating plate. The warmer does not provide fluid flow rate control. Fluids normally refrigerated can be warmed to temperatures between 96 – 104°F (35.5C – 40°C) at flow rates up to 338 ml/hr in room temperature between 68 – 77°F (20 – 25°C). Because it can reach 104°F, it is not recommended for blood.

## **Precautions**

### **SAVE THIS MANUAL FOR FUTURE REFERENCE!**

**IMPORTANT:** Before using the i-Warm Fluid Warmer, please read and understand this User's Manual and the SAFETY PRECAUTIONS prior to use. If you have any questions, please contact Midmark Corporation at 1-800-643-6275.

## **Warnings:**

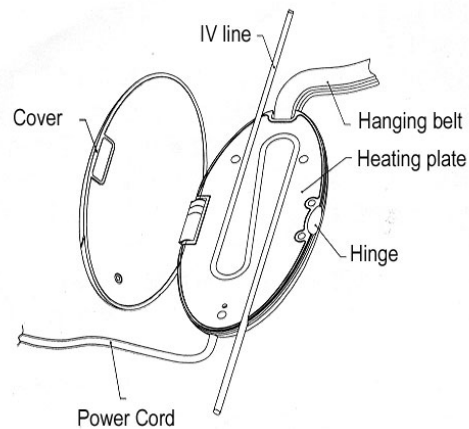
- All air must be purged from the fluid lines prior to connection to the patient.
- Monitor the fluid lines to insure they are air free. Never administer fluids if there are air bubbles in the line between the drip chamber and the patient connection.

**Failure to follow the above warnings could result in the administration of air to the patient. This could cause death or serious injury.**

### Equipment Alert

- The i-Warm must be unplugged when not in use. Failure to do so could result in electrical failure
- Do not immerse in cleaning and/or sterilization solution. Do not submerge or soak unit. It is fluid resistant, not fluid proof.
- For grounding reliability of the Fluid Warmer, plug only into a properly grounded outlet.
- Isolation of the power supply can only be achieved by disconnecting the cord from the main power source.
- The length of the IV line between the patient and warmer should be limited. If over 10" from the patient, heat loss will begin to occur before fluid is infused into the patient.
- The warmer is designed to be IV pole mounted with the hanging belt which can be adjusted.

### Product Description



## Instructions for Use

1. Hang the warmer on the IV pole vertically.

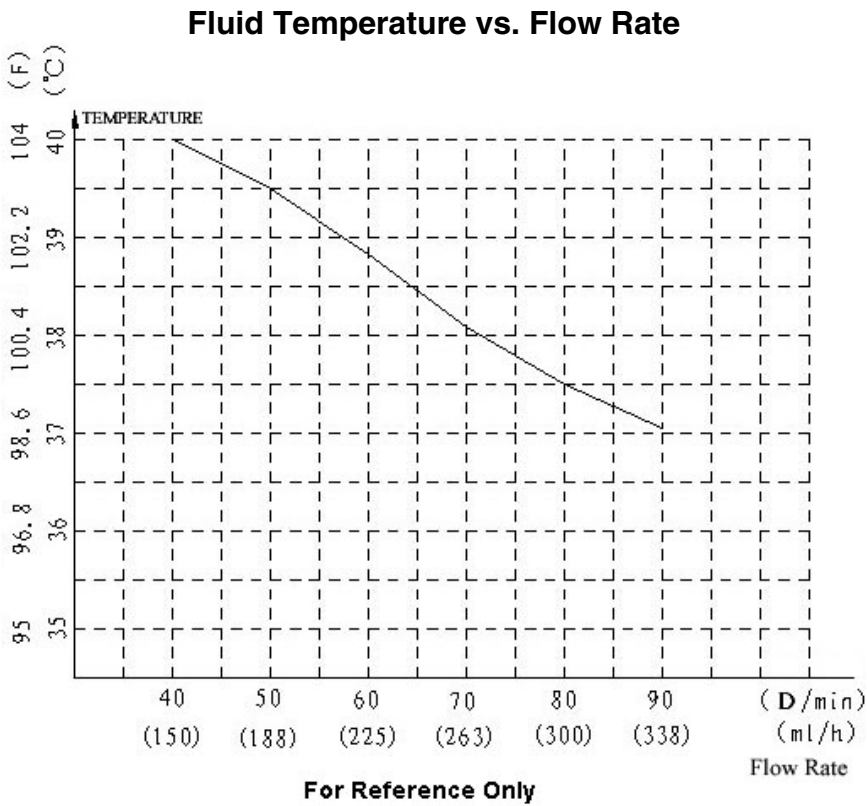
**Note:** If an infusion pump is used, the warmer should be located slightly under the IV line's exit from the pump.

2. Slide the IV line into the groove on the heating plate carefully. Then close the cover of the warmer.
3. Plug the power cord into a properly grounded outlet. It may take 5 to 10 minutes for the warmer to warm up to 104°F (40°C).
4. The warmer will start to warm up immediately when it's plugged in. If the heating plate of the warmer reaches 104°F (40°C), the warmer will temporarily stop producing heat and the green indicator will go off. The warmer will automatically turn on again once the temperature inside the warmer goes down.
5. If the temperature of the warmer should rise above 108°F the power should go off. If not, the red light will go on. Unplug the warmer in this case.
6. Press the grey button on the front panel to switch the temperature between Fahrenheit and Celsius.

**IMPORTANT:** A backup system within the warmer is independent of the main controller and monitors fluid temperature continuously. If the output fluid temperature exceeds 113°F (45°C), the backup system will immediately interrupt power to the heaters.

**Effect of Flow Rate on Fluid**

Fluid temperatures exiting the patient line are affected by flow rate. The following flow vs. output fluid temperature curve shows the warming performance of the i-Warm Fluid Warmer. (Fluids being bolused will not gain much benefit from fluid warmers.)



Note: Temperature is measured at the exit of the warmer.

## Specifications

Suggested Operating Temp.	68 – 77°F (20 – 25°C)
Relative Humidity	80% Maximum
Power Requirement	120VAC 60Hz
Flow Rate Range	0.1 – 338 ml/hr
Dimensions	7.7" x 3.5" x 2.2"
	190 x 100 x 60 mm
Weight	1.32 lb (0.6 kg)

## Storage

This product should be stored in an environment with an ambient temperature range of 14°F – 131°F (-10°C – 55°C), relative humidity below 93%, and air pressure 500hpa – 1060hpa. Do not store close to corrosive vapor and/or harmful impurities.

## **Warranty**

Midmark Corporation warrants that the i-Warm Fluid Warmer will be free from defects in materials and workmanship under normal use and service for a period of one year from the date of delivery by the distributor to the first purchaser. If any defect occurs during the one year warranty period, the aforesaid purchaser should call Midmark Corporation at 1-800-643-6275. After the warranty period, Midmark Corporation will provide service, charging for necessary parts. The warmer should be returned properly packaged, postage prepaid.

003-2353-00 Rev. B (5/11)